MYRMECIA

News Bulletin of the Australian Entomological Society Inc.
Volume 37, Part 3, August 2001
Australia Post Print Post Publication PP242296/00144. Price $5
ISSN 1323-6032

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THE COVER

Greg Slevin won the insect illustration competition at the Annual Meeting in Darwin with the picture on our cover. Can you identify the beetle?

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NOTICE

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COPY DEADLINE FOR NEXT ISSUE

Material for publication in our November 2001 issue should be in the hands of the Editor before **Friday 19 October 2001**.

All material should arrive by e-mail at: laurence@ento.csiro.au; fax:02 6246 4264

EDITORIAL

The insect scene in Australia continues interesting, both locally and internationally. Locally, we have our invasive species - this issue of *Myrmecia* discusses the fire ant and the crazy ant now taxing the efforts of our quarantine and control specialists. Internationally, Australia continues at the forefront of the search for more effective means of communicating insect information, with the publication, and near production, of several new LucID systems. Just issued is the new cd-rom on *Acacia* species, a major component of this continent's biodiversity, also a new cd-rom illustrating 5% of the world's thrips fauna. In press is a magnificent introduction to mites, and following on soon an introduction to Hymenoptera families and to Australian spiders. These profusely illustrated systems will change the way future generations learn about entomology. To have had available, 40 years ago, a library of 1500 photomicrographs of 180 thrips species, was unthinkable, but 100 delegates at a conference in Italy in July received a free copy of this cd-rom. Information technology has its down side. CSIRO Black Mountain Library, possibly the finest entomological library in the southern hemisphere, will no longer buy hard copies of many major journals. CSIRO has signed a contract whereby Blackwells journals will be available in future only electronically. A fire in Alexandria destroyed the finest library of the ancient world; electronic communication seems set to destroy the scholarly habit of library browsing. Wiser heads than mine must decide how science will be pursued by future generations, but I deeply suspect this extinction of the printed word and all that it implies for the demise of learning through hand and eye. But total circulation of our Society Journal fell from 940 (1999) to 906 (2000), and our citation index is lower than 'local' journals in Florida, Scandinavia and Europe. Despite the clarion call from Ray Kumar published in this issue, our Journal is not well quoted nor supported. Insect studies of broader interest can be found elsewhere, as in the Australian Systematic Biology and Invertebrate Biodiversity meetings. And that surely is the challenge? The vitality is in studying the interaction of insects with other organisms - not in 'entomology' itself.

Core Executive Meeting #391

11th April 2001

The death of Ebbe Nielsen was a major shock to the entomological community. The President represented the Society at the memorial service.

The ICE2004 planning meeting appointed chairs to the subcommittees, commissioned a logo and signed a contract with Carillon as organiser.

The executive agreed that an advertisement for a prospectus for investment in the neem industry was not appropriate for AJE or *Myrmecia*.

Treasurer reported that auditor's queries on the 1999 accounts have been referred to the previous executive. The magnitude of the GST on Blackwell's accounts and the transactions for ICE2004 will force the Society to register for GST. Members will be advised in the next *Myrmecia*. Sustaining Associates need to be maintained as their sponsorship offsets the student and retired member discounts. M. Lenz is unable to continue as Public Officer and a replacement, resident in Canberra, must be found.

The AES has been placed within the Plants and Ecology cluster of FASTS, but whether this is appropriate needs review.

The Society needs to take a strategic view of its future directions and operations and a planning process should be formulated before the AGM.

New Members

Ms Ayesha Burdett, Willaura, Vic. (PhD student)
Mr Christopher Weldon, University of Sydney (Masters/PhD student)

Core Executive Meeting #392

9th May 2001.

M. Lenz will be unable to continue as Public Officer and is seeking a replacement. Minimum requirements for the position are to be resident in Canberra, to forward mail to the Treasurer and to lodge forms with the Registrar.

The death of member Kay Lindsay was noted.

The Australian Institute of Agricultural Science and Technology Metamorphosis Project has suggested closer ties with AES and, perhaps, a consolidation of administration tasks.

AES members were informed by e-mail that nominations are being sought for Gene Technology Technical Advisory Committee, Gene Technology Community Consultative Committee, Gene Technology Ethics committee.

The term of our patron, the Governor-General, concludes at the end of June. We may correspond with Official Secretary to explore possibility of the Governor-General designate assuming position as patron

Treasurer reported that 2000 accounts have been sent to the auditor. Members were notified in *Myrmecia* that the AES will register for GST from 1st July 2001. Reminders have been sent to Sustaining Associates. ACTS, based in Canberra, no longer offer secretarial services to societies, but has offered to run all of the Society's conferences and this service would include secretarial services. No action is envisaged at this stage.

The Logo for the International Congress of Entomology has been decided and a full day meeting will be held at the time of the AGM.

Timing and venue for outgoing and incoming council meetings and the AGM need to be arranged with the convenor of the 32nd AGM & Scientific Conference. The Secretary is to remind all office bearers of their reporting obligations for the AGM.

The Treasurer has prepared a briefing paper on a planning process that should be inaugurated by the president at the AGM.

New members

Dr Siva Subramaniam, DPI, Bowen (Silverleaf Whitefly)

AES 32nd AGM

The AGM is planned to take place at 5.30 at the Conference Venue in Manly.

AES Conference 2001

23 - 28 September

Venue: Manly Pacific Parkroyal at Manly.
Details at: <www.uws.edu.au/chaps/aesc>
Or email to: a/campbell@uws.edu.au
Fax: 02 4570 1520; Tel: 02 4570 1690

A E S - SHOULD IT EXIST (PART II)?

Since writing in the previous issue of *Myrmecia* (Vol. 37(2), 8-10) on the above subject, I have had further discussions with colleagues in Europe and North America. It has been pointed out to me that a scholarly society is quite different from non-scholarly bodies. Thus unlike a policemen's society, a scholarly society can, but seldom negotiates loans, discount purchases, mortgages or even research or travel grants for its members. The aim is to promote scholarship and learning and therefore a society is what members make it by their intellectual contributions. For example, the July (2001) meeting of the Royal Entomological Society, London was devoted to "Special Interest Group For Technology in Entomology" (details available

on request). The April (2001) meeting was preceded by three sessions on GMOs and Insects. Several of the contributors to these activities are easily on their way to become authorities in their specific disciplines. This helps in their intellectual and career developments as well as advancing the cause of insect science. To sit with folded hands and expect that AES would help in the intellectual and career developments of her members in return for their annual dues of $60.00 is simply not on.

The Entomological Society of America has almost 7,000 members throughout USA and overseas, serving the scientific and professional needs of entomologists and individuals in related disciplines. Thus the view of Laurence Mound that 'entomology' is no longer a 'field of study' "only a generalised area of interest" seems far removed from the realities of life. With freer world trade, relaxation of quarantine regulations and influx of alien pests, Australia is going to need solid & comprehensive entomological training and its practitioners more and more. Already the Red Imported Fire Ant from USA to Brisbane is being tackled with metabolic inhibitors developed in USA.

However, the point made in my previous contribution that a journal unsupported by a well established society is unlikely to survive needs further elaboration. Scientists need established journals to publish their research results and where their worth would be recognized by their colleagues and peers. This quest for recognition its symbolised dramatically in the choice of journal publication outlets. Scientists in North America and Western Europe do not need to agonise about where to publish, since over three-fourths of all international scientific journals are published from these two regions. For scientists in other regions of the world, much more thought is expended in this choice. Thus, "to publish in an outstanding foreign journal often signifies to the Philippine and Malaysian scientists a testing and validation of the quality of their work by some universalistic scientific norms than is true of publications in their own national journals" (Useem et al., 1981 *Social Movements, Conflicts and Change*, 4, 283-316) as can be seen in a summary of their sample study in Asia. The same trend seems extant in Australia. We need to wrench ourselves from this legacy, and to establish high-level scientific journals worthy of the best papers from anywhere else in the world.

New journals are being established at the rate of one a day in the industrialised world, so we should not be hoodwinked by people who discourage us from starting new journals or strengthening of old journals on the facile plea that there are already too many journals in the world. Royal Entomological Society, London alone established two new journals in the last six years. The stocks-in-trade of scientific journals are ideas and we must therefore be in the market-place for journals if we are to be competing participants in this trade.

From my own experience assertions by scientists and their mentors that their work is world class because it is published in a Western Journal is of little merit. As a editor of three journals and having served on many more, it doesn't bother me a bit. In the long run your reputation would depend not where you publish but what you publish. The AES Promotions Officer should lose no sleep in pondering over the question why does the Australian Entomological Society exist? It is for the AES members to come up with ideas in which mental excitement can be found, discussion groups formed and special programmes organized. If no such contributions are forthcoming then the society is functioning reasonably well and the expectations of its members are being met.

Finally, I would like to draw the attention of AES members to an article entitled JOURNAL WARS that appeared in May 12th –18th (2001) issue of *The Economist*. The article points out that big publishers are tightening their grip on the lucrative science journal market. On May 7th 2001 Reed Elsevier, an Anglo-Dutch publishing giant bought Harcourt General, an American publisher, for $4.5 billion. This means that now Reed Elsevier will control "some 20% of the Science-journal market and add a further 500 journal to its 1,200 strong stable". The jacking up of prices of journals by the multinationals is remarkable. It now costs a whopping $17,444 a year to subscribe to Brain Research, a Reed Elsevier title, while a chemistry title *Tetrahedron Letters* owned by this company costs $9,036 a year in subscription. Even the *Journal of Natural History* (Taylor & Francis) now costs US$17,841 in annual subscription.

Earlier, according to a February 1993 issue of The Economist the fastest growing part of all rich countries is neither manufacturing nor traditional services but "the knowledge sector". The knowledge can be converted into jobs and income. Therefore, anyone who wants to do away with AES and its journal on one excuse or the other should think twice before doing so and have a clear idea of what globalisation is doing to the world around us.

Ray KUMAR

WWWeb Spinners

Please email me at *Lsilberb@metz.une.edu.au* if any of these links are dead. Also, if you have any favourite web sites, please contact me and I'll do my best to list them in the next edition of *Myrmecia*.

http://www.ento.csiro.au/aicn/ The Australian Insect Common Names web site. This website is based on the *CSIRO Handbook of Australian Insect Names* - 6th edition, 1993. The database of names behind the Handbook has been updated and augmented to reflect taxonomic changes, new names and newly recorded species. This wonderfully useful and accessible web site also includes images and large-scale distribution maps along with the names of the arthropods. The web site is organised into common names, scientific names and a systematic list.

TISH SILBERBAUER, *Ecosystem Management, School of Rural Science and Natural Resources, University of New England, Armidale, NSW 2351. Email: LSILBERB@metz.une.edu.au*

Student Forum

Hello again. Any students or recent students (ie. those that have just finished their postgraduate theses) who would like to express an opinion or to precis their research in this section, please contact me by email (lsilberb@metz.une.edu.au) or by phone (02 6773 2287).

Tish SILBERBAUER

Research Topic: The invasion and ecology of the Red Imported Fire Ant, *Solenopsis invicta* in Australia. PhD project, Melinda McNaught, University of New England, Armidale, NSW

Introduced ant species are responsible for significant amounts of ecological and economic damage around the world. In Australia, examples include the Argentine ant, *Linepithema humile* (Mayr) and the Big-Headed or Coastal Brown ant, *Pheidole megacephala* (Fabricius) which cause damage to crops, are urban pests, and actively displace native ants and arthropods where found. Another pest ant species, the Red Imported Fire Ant, *Solenopsis invicta* (Buren) has become a significant problem in the southern United States after being introduced from South America in the 1930s. It currently infests over 140 million ha covering 11 States, and around a billion dollars is spent in the US each year attempting to minimise its impact.

Fire ants cause extensive agricultural and ecological damage where they have invaded. They disrupt harvesting of ground growing crops by their mound building and stinging behaviour, attack and sometimes kill newly born farm animals, also wild animals such as deer and squirrels, and displace native ant and arthropod communities. Fire ants can achieve high densities in areas where they have become established and, along with their potent sting, are a serious problem and have been the subject of intense research in the US. Recently, fire ant populations were discovered in Brisbane, Qld (February 2001). Two loci have been detected – one at Fisherman Islands and another centred on Brisbane's western suburbs. The surrounding regions of the city contain both agricultural and conservation areas, both of which are potentially threatened by fire ant invasion. Furthermore, excluding central Australia, fire ants could potentially successfully invade all coastal and most temperate regions of the country.

Most introduced ant species exhibit a group of characters that are thought to contribute to their success as invaders, and these have led to them being termed 'tramp species'. These include an affiliation with disturbed areas, the ability to form large, multiple queen 'super-colonies', reproduction by budding and high levels of interspecific aggression. Fire ants fit into the tramp ant category, though they can exhibit both single and multiple queen colonies, which primarily reproduce by nuptial flights and by budding, respectively. In the US, both reproductive forms are present, although the multiple queen colonies, because of their ability to reach high densities, are considered more of a pest.

Fire ant behaviour in Australia

Preliminary observations on fire ant foraging ecology and behaviour in Australia reveal that they are sub-cryptic in nature and are not active ground foragers, as they are in the US. Their nests consist of a central mound with radiating tunnels just under the soil surface, although in unstable soil such as sand, mounds are not always obvious, particularly with small colonies. Both reproductive forms appear present; single queen colonies at Fisherman Islands and primarily multiple queen colonies in the suburbs, where only occasional outliers, presumably from nuptual flights, are detected. Fire ants currently appear absent from undisturbed forested areas, but have shown themselves capable of dominating disturbed areas, particularly in the absence of our dominant ant genus *Iridomyrmex* spp. Preliminary baiting trials have revealed that *Iridomyrmex* spp. are capable of displacing fire ants at baits, which suggests that there may be biotic resistance to fire

ant invasion. However the presence of a chemical defence system allow fire ants to be very successful at displacing native ants at food sources when in high numbers.

Part of my PhD will focus on examining the ecology and behaviour of fire ants in Australia, by looking at their foraging strategies and their interactions with native ant species. I am interested in how invasive ants behave and interact with native ants, and what are the displacement mechanisms used by these invaders which lead to them being such a large threat to insect biodiversity. My project will also be examining the invasion dynamics of the Big-Headed or Coastal Brown ant, *Pheidole megacephala*, in SE Qld, which is currently posing a threat to the ant and insect fauna in sub-tropical open forest in this region, as well as monsoonal rainforest of the NT. Fire ants will provide an opportunity to examine how a relatively new pest interacts with native ant species and can co-exist with or displace them, and coastal brown ants provide the opportunity to examine how an international pest interacts with the diverse ant fauna present in forest ecosystems and how it is able to so successfully displace them. An understanding of how these invasive ant species behave in Australia will provide valuable information on how to better detect and control them, as well as help reveal the mechanisms used by introduced ants to render them so successful as invaders.

Fire ant identification

Due to the interest generated in the arrival of fire ants in Australia, **Cas Vanderwoude** and myself have put together a key for interested entomologists for identifying fire ants and other *Solenopsis* representatives, both native and introduced, in Australia. Taxonomically, the Red Imported fire ant, *S. invicta*, is part of a fire ant species complex that includes fire ants native to Southern and North America. A close relative, the Ginger or Tropical fire ant, *S. geminata*, is an urban pest in Darwin. Australia has native *Solenopsis* species, which are small cryptic ants that are only occasionally encountered. The key for distinguishing *S. invicta* from *S. geminata* and native *Solenopsis* in Australia is available from my e-mail address below. For further information on the fire ant see:

< http://fireant.tamu.edu/materials/factssheets/fapfs0~13.htm>

Other useful sites are:

http://www.dpi.gov.au/ (click on the fire ant worker)

http://sandiego.edu/~tmcglynn/exotic.htm (useful links to invasive ant sites)

The distinguishing features of *S. invicta* include a ten-segmented antenna (including the scape), a distinct 2-segmented club and three mandibular teeth, with the lower margin of the clypeus terminating in two small teeth, and a central clypeal tooth behind a single setae. It is possible to confuse *S. invicta* with other native and introduced species. Native *Tetramorium* spp. superficially resemble *S. invicta*, but differ by possessing a 3-segmented club and monomorphic workers. *Pheidole* spp. appear similar to *S. invicta* but have propodeal spines or teeth and are dimorphic, with major workers possessing disproportionately large heads. Native *Solenopsis* differ from *S. invicta* chiefly in size; they are all very small, yellow, cryptic species with eyes often reduced to just a few facets, and by having some "squat" funicular segments that are wider than long. *Oligiomyrmex* spp. also have two-segmented antennal clubs, but like native *Solenopsis spp*, are lightly coloured, very small (amongst the smallest of ants in Australia), and cryptic. *S. geminata*, a close relative, can only be distinguished using major workers, where the vertex of head possesses a strong central cleft, short antennal scapes and only two clypeal teeth.

Melinda McNAUGHT
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Thrips, Plants, Tospoviruses: The Millennial Review

In the first week of July, one hundred or so of us met in Reggio at the very southern tip of Italy for the Seventh International Symposium on Thysanoptera. We were an eclectic mix, drawn from five continents, and among our number were applied entomologists, academics and virologists. This was an occasion where two long-standing series of international symposia (one series on thrips and the other on tospoviruses) merged into the one meeting, and very successfully too.

To highlight particular talks here is to make a highly subjective and personal choice, and this should be thought of as a representative selection. Inevitably, what tended to excite my imagination was that which I had not previously encountered, such as the elegant work by Maurice Sabelis and Arne Janssen on the dynamics of the relationship between host plant, western flower thrips and predatory mites, where each arthropod can feed on the pollen, and each on the other. Like everybody else, I enjoyed Gerald Moritz's split screen presentation with the live action video of his *Suocerathrips linguis* colony ("just for fun"). Also

his discussion of how the midgut and salivary glands are physically thrown together for a short period in the first larval instar, thereby facilitating the transfer of tospovirus. Irene Terry showed how the Australian Aeolothripid genus *Cycadothrips* had clearly co-evolved with the Australian *Macrozamia* cycads for which they are major pollinators. This led to general discussion on the role of thrips as pollinators (the extent of which is probably seriously under-estimated by most biologists), with one example given as the cocoa tree. This led to William Kirk's tongue-in cheek suggestion that henceforth the rallying cry should be "no thrips, no chocolate!" You have been warned. Sylvia Pinent presented evidence for *Aulacothrips dictyotus* being the first discovered ectoparasitic thrips, on the polyphagous Homopteran pest *Aetalion reticulatus*. With that most ubiquitous of qualities, hindsight, we should not really be surprised. Indeed, we should now be asking what else will we find that thrips stick their mouthparts into. And how does this relate to tospoviruses? Indeed, how did what are essentially animal viruses end up in plants in the first place? For, suggested Laurence Mound on the first morning, the association between thrips and tospoviruses is not an historic one.

This was a conference with concurrent sessions and duty called me to attend some of the tospovirus sessions on behalf of virological colleagues back home. I found this unexpectedly rewarding and was pleased to find that I was not the only entomologist to make the effort. The interaction seemed to be two-way. Thus, **Alan Clift** from the University of Sydney discussed the recent history of tomato spotted wilt virus in Australia with particular emphasis on the different biologies of the thrips vector species involved. Alan was part of a very small Aussie delegation, along with **Greg Baker** from SARDI. I'm not counting ex-pats!

Unfortunately, I can't tell you much about Reggio itself as I was one of a small group to be based at a hotel in the neighbouring village of Gallico along the coast. Each afternoon we were promptly whisked away by coach. However, it was hot and full of narrow streets through which moved a seemingly never-ending stream of traffic. The local gelateria came highly recommended, but unfortunately the locals already knew about it and everyone else seemed to have read their Rough Guide too. I never braved the permanent queue. But Sicily, a mere three miles away, provided a splendid backdrop, both to restaurant meals on seafront terraces in Gallico, and to the conference dinner itself in Reggio. The wine and conversation flowed and those few of us wearing ties had, in the absence of air-conditioning, removed them by the second course.

An end of conference outing into the mountains in the Aspromonte National Park offered only partial relief from the relentless heat. But the sumptuous five or six – I lost count somewhere around the first, or second, pasta dish - course lunch that followed was provided free by the National Park, a generous gesture that reduced the assembled group to an eerie quiet as we tried to work out the chances of getting such treatment in our own countries. Or perhaps we were finally afflicted by communal guilt after a week of serious over-eating.

Thanks are due to the organising committee, particularly Rita Marullo and Laurence Mound, for their efforts in putting together what was a wide-ranging and thought-provoking programme. It was nice to come away from the conference with renewed enthusiasm for the group of insects that I work on, with a real sense of their diversity and importance in nature. For me, the success of the conference could be gauged by the way that seemingly disparate talks would be revealed as complementary, each shedding light on the other. Also by the lively discussion that was still to be found at the coffee break even on the last day of the conference.

The next meeting is scheduled for California in 2005, and anyone with a serious interest in thrips or tospoviruses should already be planning their trip.

Dom COLLINS
Central Science Laboratory
York YO41 1LZ U.K.

World Prize: to remember Australian scientist

A major new international science prize has been named for the late Dr Ebbe Nielsen who died in March this year. "The Prize is a fitting tribute to the role played by Ebbe Nielsen in gaining international recognition for the importance of systematics and biodiversity" said Dr John Curran, of CSIRO Entomology. It is the world's first award specifically designed to recognize applications of informatics research to biodiversity. Thirty-five thousand US dollars will be awarded annually to a young bio-informatics researcher. It will be awarded for the first time in 2002, by the governing board of the new Global Biodiversity Information Facility (GBIF). More Information from: Dr John Curran 02 6246 4037.

GBIF website (www.gbif.net).

Earth Alive!

Biodiversity Month and National Threatened Species Day 2001 is on in September. Registration kits are available now.

Biodiversity Month provides a national focus to celebrate and promote your local biodiversity, get the media interested in a local event or on-going biodiversity project, and increase your community's understanding and involvement in biodiversity conservation projects in your region.

This year, Biodiversity Month is being organised with National Threatened Species Day, held every year on 7 September to mark the date in 1936 that the last known Tasmanian Tiger died. It aims to raise awareness about Australia's threatened species and encourage all Australians to get involved in their conservation.

Many environmental groups and organisations from around Australia will soon be organising events aimed at educating and involving anyone willing to learn about our precious biodiversity. And there's something for everyone to get involved in.

This year the Community Biodiversity Network and the Threatened Species Network have developed a one-stop-shop for Biodiversity Month/National Threatened Species Day, and will be encouraging the community to get their 'Hands on for Habitat' and create a garden haven for wildlife. Registration Kit. The kit includes a product order form, which enables groups taking part to access a broad range of free education and promotional materials.

To receive a copy of the Kit or for more information contact the Community Biodiversity Network. Ph: (02) 9262 4743, Email: <earthalive@cbn.org.au>. For more information about National Threatened Species Day, contact the Threatened Species Network on 1800 251 573. Groups can also register events and order products on-line through the Biodiversity Month web site at: <www.cbn.org.au/projects/earthalive2001/home.html>.

5th Invertebrate Biodiversity and Conservation Conference

December 1 - 4, 2001. Adelaide University, SA. http://www.waite.adelaide.edu.au/bio2001

The symposia and invited speakers include:

Impact of invasive species

"Impact of an invasive social wasp on New Zealand's forest invertebrate community" *Jacqueline Beggs* (Landcare Research NZ). "Diversity and potential impact of introducing marine invertebrates in Australia" *Chad Hewitt* (CSIRO Marine Science). "Invasion meltdown" *Dennis O'Dowd* (Monash)

Invertebrate biodiversity of the arid zone & ephemeral waters

"Ant biodiversity in arid Australia" *Alan Andersen* (CSIRO Sustainable Ecosystems, Winnellie, NT). "Mound springs of the Great Artesian Basin - issues, progress and future directions" *Winston Ponder* (Australian Museum). "Microfaunal biodiversity in ephemeral waters: temperate and arid Australia" *Russell Shiel* (Adelaide Uni.), *Stuart Halse* (CALM W.A.) & *John Green* (Waikato Uni. NZ)

Marine invertebrate biodiversity

"Consequences of habitat fragmentation and invasion" *Sean Connell* (Adelaide Uni.). "Polychaetes - their biological biodiversity - all is revealed" *Pat Hutchings* (Australian Museum). "Australian echinoderms: evolution, diversity and exploitation" *Greg Rouse* (Sydney Uni. & SA Mus.). "Biodiversity of marine parasites" *Ian Whittington* (Queensland Uni. & SA Museum).

Habitat fragmentation: plant-invertebrate relationships

"Impacts of burning on native grassland invertebrates: initial response of weevil populations" *Barbara Barratt* (AgResearch, Invermay Research Centre, NZ)

"Habitat disturbance and plant -invertebrate relationships: lessons from stream habitats" *Barbara Downes* (Melbourne Uni.). "Impacts of burning on native grassland invertebrates: issues associated with sampling and data handling" *Colin Ferguson* (AgResearch, Invermay Research Centre, NZ). "Invertebrate conservation and impact/ implications of habitat fragmentation: an overview" *Tim New* (La Trobe). "Habitat fragmentation in tall tussock grasslands: plant-invertebrate relationships" *Cathy Rufaut, Katharine Dickinson, Gerry Closs* (Otago Uni.) & *George Gibbs* (Victoria Uni. Wellington).

Molecular tools in invertebrate conservation

"Phylogenetic considerations in conservation worth: concept and practice" *Ross Crozier* (JCU). "The impact of population dynamics on evolutionary radiation in Onychophora" *David Rowell* (ANU). "Hidden diversity and unexpected biology in velvet worms revealed by molecular techniques" *Paul Sunnucks* (La Trobe)

Legislation & education

"ECOWATCH - getting kids involved in biodiversity" *Geoff Clarke* (CSIRO Entomology). "Another Copper Cuppa?" *Simon Nally* (NSW National Parks and Wildlife Service). "Invertebrates and the EPBC Act" *John Vranjic* (Wildlife Australia Branch, Env. Australia)

REGIONAL NEWS

AUSTRALIAN CAPITAL TERRITORY

Despite the efforts of our Councillor, **Martin Steinbauer**, before migrating to the pleasures of the northern hemisphere summer, no news is available from ACT. Although, as noted earlier, *Myrmecia* Editor also followed the sun north, making contacts and contracts in the tospovirus world in Italy. Also demonstrated at the thrips meeting in Italy, was the new cd-rom to 180 thrips species worldwide (mainly pest species), that is illustrated with 1500 photomicrographs. Produced by **Laurence Mound**, **David Morris** and **Gerald Moritz**, this was published by ACIAR through the interest of **Paul Ferrar**.

NEW SOUTH WALES

CERIT – UNSW

The organisational skills of the Centre for Entomological Research and Insecticide Technology are being put to the test this year with some members of staff having extended periods of leave, and two industry symposiums scheduled.

Earlier in the year, **Julie-ann Short** had an unexpected and prolonged absence to recover from an Achilles tendon rupture that occurred during a weekend volleyball tournament. She returned to work just before the first of CERIT's two Symposia (a new *twist* on 'just-in-time' management? groan!) CERIT's Industry Briefing Symposium '*Timber Pest Management 2001 - latest developments and Training Pathways for Timber Pest Managers*' was held at UNSW, on Saturday 19 May. Organised in collaboration with Property Services Industry Training Advisory Body NSW, it was judged a great success by the 140 attendees. Keynote speakers included **David Nimocks** (Ensystex, USA), **Theo Evans**, (CSIRO Entomology), **Don Ewart** (of 'Dr Don's Termite web page' fame), **Mark Moyle** (Nationwide Pest Control), **Sundaran Baskaran** (Bureau of Rural Sciences), and **Andrew Campbell** (Termite Action Group). **Chris Orton** led a forum session on 'Training Pathways for Timber Pest Managers' which shortly will result in a formal 'outcomes document' to be carried forward to assist in development of a higher level qualification for Timber Pest Managers. Chris also attended a recent Standards Australia Workshop on the *'New Australian Termite Management Standards'*.

Planning is well advanced for CERIT's second 2001 Symposium *'Managing Food Industry Pests in Australia - 2001'* which is to be held at UNSW on Thursday 27 September. We expect to finalise the program and commence the mailout by the end of July. In the meantime, **Julie-ann Short** and **Patrick O'Rourke** have been busy identifying and contacting appropriate people with responsibility for managing pests in the food industry to provide additional focus for the mailout. If you are interested in obtaining information about the event please email <CERIT@unsw.edu.au> or phone (02) 9385 0344.

Chris Orton attended the recent *'Flystrike and Lice IPM Control Strategies'* conference in Launceston where he was pleased to catch up with many old friends including; **Garry Levot** (EMAI), **Geoff Allen** (Univ Tas), **Lynette McLeod** (NSW Ag), **Ian Russell** (CSIRO Textiles & Fibres), **John McKenzie** (Univ Melb), and **Allen Heath** (Agresearch NZ) – to name but a few.

Still in 'out and about' mode, Chris also attended a recent workshop on *'Food Analysis Techniques'* held by Foodsafe Risk Management at UNSW. He seems much more 'picky' about his food lately.

Recent visitors to CERIT have included **Roger Sargent** and **Andrew Smith** (Schering-Plough), **Rob Dawson** (Foodsafe Risk Management), **Merilyn Geary** (Med Entomology, Westmead Hospital), and **Chris Virgona** (Starpharma).

Chris ORTON and Julie-ann SHORT

Orange Agricultural Institute

Graham Thwaite spent the last week of May investigating the possible use of *Trichogramma* spp as biocontrol agents for borers in prune trees. Accompanied by his technical staff, Graham visited Stahmann Farms pecan orchard at Moree where *Trichogramma* is successfully used in the management of borers, then continued on to Alstonville to view **Gus Campbell's** project on the use of *Trichogramma* spp for borers affecting macadamias. The north coast visit coincided with the move of Gus Campbell to Bathurst to take up the new position of research officer at the recently opened Centre for Organic Farming located at the Bathurst Agricultural Research and Advisory Station.

Graham THWAITE

NSW Country News

Cotton entomologists have been having a very busy time over the last few months. Just before easter, **Robin Gunning** attended a West African *Helicoverpa* insecticide resistance management conference held in the Ivory Coast. Robin delivered the keynote address in French. No problems giving the talk, but understanding the questions afterward

was a bit tricky!
In May, **Dave Murray**, **Paul De Barro**, **Bernie Franzman**, **David Lea**, **Myron Zalucki**, **Vic Edge**, **Bruce Pyke**, **Neil Forrester**, **Lewis Wilson**, **Gary Fitt**, **Grant Herron**, **Emma Cottage**, **Peter Gregg**, **David Holdom** and **Robin Gunning** attended whitefly and aphid workshops at Narrabri, organised by the Cotton Research and Development Corporation.
During June, **Gary Fitt**, **Grant Herron** and **Robin Gunning** took part in the cotton industry's annual "flying circus" (i.e. the annual insecticide resistance tour to all cotton areas in Queensland and New South Wales). These stalwarts spoke at nine cotton grower meetings in the space of 4 days!
In early June, **Robin Gunning** and **Emma Cottage** caught up with **Alan Devonshire** (IACR-Rothamsted) in Canberra.
The entomology lab at the Tamworth Centre for Crop Improvement is literally in a state of upheaval at the moment! **Robin Gunning** and her team are having to move into a new pesticide lab because the old lab does not have a legal ceiling height. We tried to say that it was really the floor that was too high, but to no avail!

Robin GUNNING

University of New England
Peter Gregg's mob in the Crop Protection lab have been busy. They welcomed the arrival of a new PhD student, **Samuel Lowor** from the Cocoa Research Institute of Ghana. Sam will be investigating semiochemicals for his PhD. Congratulations are in order for **Peter** and **Alice Del Socorro** – they won the Australian Cotton Cooperative Research Centre's award for Innovative Research for their work into plant-based attractants for *Helicoverpa armigera*. **David Britton** has been busy too, representing the lab at the International Society of Chemical Ecology 18th Annual Meeting, held at Lake Tahoe in California in July. Following the conference he had an enjoyable few days indulging in some light trapping in and around Tucson, Arizona, and can now look forward to spending the rest of winter pinning his catch!

Alice DEL SOCORRO and Tish SILBERBAUER

NORTHERN TERRITORY

Medical Entomology Branch
Another hectic control operation was required in June with the detection of exotic *Aedes scutellaris* mosquitoes in an ovitrap in the Darwin port area. **Gwenda Hayes**, with **Brett Brogan** and **Allan Warchot** carried out adult fogging operations, and conducted container receptacle surveys all around the port area. Increased surveillance was carried out by the Branch in coordination with AQIS. **Peter Whelan** is following up on the results with AQIS staff to sanitise the port area. Monitoring has shown no further evidence of the importation.
Jane Carter and **Brett Brogan** made a rapid foray into Arnhem Land after the report of the first case of MVE this year in the Top End in July. They collected mosquitoes for virus isolation and carried out adult fogging operations around one of the risk communities. It was a case of all hands on deck with **Catherine Goody**, **Gisela Lamche** and **Nina Kurucz** assisting Jane and Brett with processing all the collected mosquitoes. The mossies were thick with over 5,000 per trap in many areas.
Peter Whelan attended a meeting in Cairns with **Scott Ritchie** and **Sue Harrington** to discuss papers for the North Australia Health Ministers Meeting. On the way back he inspected Ilparpa swamp in Alice Springs with health staff to assess the continued risk of MVE and the progress of control measures. Peter and Gwenda are in the middle of engineering assessments for annual maintenance and rectification of drains around Darwin.
Visitors to the Branch included **Des Foley** from Brisbane to collect *Anopheles* species for genetic research. **Martin Shivas** has officially finished his research project on *Culicoides ornatus* but is now busy with the preparation of papers for scientific publications.

Northern Australia Quarantine Strategy
During a meeting of the CRC for Tropical Plant Protection an attempt to redirect the focus to include some entomology achieved some success. A working group comprising **Ian Muirhead**, **Jan Cristofani**, **Glenn Bellis** and one nominee each from QDPI and AgWA was formed and hopes to get some entomological projects started in the near future. Glenn also spent 2 weeks in Java where he visited the revamped Museum Zoologicum Bogoriense. This collection of over 1 million insects, the largest in SE Asia, received a huge shot in the arm recently that brought the facilities up to world standards.

Northern Territory DPIF Entomology Branch
The Territory is in the middle of its dry season and experiencing some strange weather. Normally it doesn't rain in the dry season but today it poured

and it feels monsoonal, with the heavy storms and dark sky. The Branch has been operating with half its staff at various times during June and July, with staff taking recreation leave and work trips.

Heather Wallace's contract with the Termite Group finished on June 30 and she is currently on four weeks leave. Heather is due to resume work in the Branch in August as funds will be available from external organisations. **Suzanne Gall** completed her five-week contract with the Branch working on insect surveys to detect any incursions entering the NT from the increased movement of defense personnel returning from trips to Timor. **Tiana Scrivener** has also finished her part time contract with the Branch. Tiana was employed for six months to assist **Lanni Zhang** with the soft chemical spray trials on rambutans. Lanni and **Stuart Smith** have finalised some of the results from the trial. Stuart is currently on leave without pay as he has picked up a week's work as a consultant on the control of the Mediterranean Fruit Fly in Seychelles. More than one of us offered to assist him on this trip.

Michael Neal and interstate CSIRO staff have been involved with trials on the collection of *Mastotermes* from the NT and using them in laboratory trials in Canberra and Melbourne. Michael has just returned from a week's visit to the laboratories where the termites were used. Michael spent three days with **Michael Lenze** and **Silvano Runko** of the CSIRO Termite Group in Canberra, where they were carrying out studies on the resistance of building material to *Mastotermes* attack. Another three days were spent with **Jim Creffield** at CSIRO Forestry Products, Melbourne, where studies were being conducted on the susceptibility of treated timber to termites.

Graham Brown is due for a trip to Dili, Timor on July 23 for quarantine issues and to inspect the ports for any major insects or snails which may be of a quarantine threat to the NT. The courageous fire wardens Graham and **Deanna Chin** are due to attend a fire training course where they will hopefully be trained to save their work mates from future fires in the building. Deanna has been answering enquiries on the control of mango leafhopper, red-banded thrips and numerous enquiries on various household pests. Sometimes it was difficult to determine if the householder should be taken seriously or whether they had a really good imagination. Deanna and **Haidee Brown** are currently preparing "live interactive displays" for the Darwin Show.

Since **Heather Wallace** has been on leave, Haidee has assisted Michael with setting up a termite trial at Gunn Point. The trial involves drilling hundreds of holes with a manual auger and Haidee has decided that this exercise is better than what's offered in "Pump Classes" at the gym.

Congratulations to **Megan Hoskins** on her marriage to **Scott Connolly**. They were married at Katherine Gorge in fine weather on July 7. We wish them both a life of happiness together. Megan is now known as Megan Connolly and since there is already a Megan Connelly in the next building we are trying to work out how to refer to them without confusion. Luckily Megen, who used to work with us no longer does.

Martin SHIVAS

QUEENSLAND – NORTH

JCU

Wildan Jadmiko successfully completed his PhD confirmation of candidature seminar and is now furiously working on the predator-prey interactions between the green lacewing *Mallada signata* and *Helicoverpa armigera*.

Richard Rowe deserves congratulations for his role in educating the Townsville public about entomological goings-on. His 'bugs weekly' column in the *Townsville Bulletin* has now published over 300 articles. **Jamie Seymour** and **Phil Weinstein** have also been contributors to these articles.

QDPI Entomology - Cairns

In late April, Redden St. was a-swarm with staff from DPI, DNRM, Cairns City Council, AQIS and the EPA, after crazy ant was detected in Cairns. Samples of the ant were collected by an AQIS inspector, identified by DPI and AQIS, and confirmed by **Steve Shattuck** as *Anoplolepis gracilipes*. Surveys conducted by personnel from each agency delimited ant populations to a confined area, making eradication highly feasible. After an initial pre-baiting period, a fipronil fish meal bait was broadcast, and laid in bait stations in sensitive areas. Within two weeks there was a reported 75% reduction in the numbers of workers being trapped. **Jane Royer** has been seconded from usual duties to identify pit-fall samples.

Mark Stanaway is back with Northwatch after a six month secondment with AQIS in Canberra.

QDPI Entomology - Mareeba

Bruno Pinese and **Keith Halfpapp** spent time with the Fire Ant Control Unit in Brisbane during May. They were particularly involved in assessing some of the chemical control options for specific

treatment situations, such as disinfesting nursery pots. Both were impressed by the blistering that follows a fire ant sting, but were unimpressed by the sting itself. Subsequent to this experience, Bruno found himself contributing to the eradication attempt against crazy ant from the Portsmith area of Cairns. He and **Stef De Faveri** organised the first two applications of fish meal/fipronil bait, which is the same bait used against this ant on Christmas Island. Keith, Bruno, Stef and **Ross Storey** will continue to have a role in the eradication program over the next 6 months, after which time most believe that the treatments should have done their job.

Harry Fay has just received QFVG/Horticulture Australia funding for a project on the integrated control of spider mites and fruitspotting bugs in papaya. This project will look at alternatives to endosulfan for fruitspotting bug control, and examine strategies that minimise insecticide applications to ensure the preservation of mite natural enemies and avert the need for intervention with miticides. **David Astridge** (South Johnstone), **Keith Halfpapp** and **Ross Storey** will also be involved in the project. Harry, Ross and **Stef De Faveri** will revisit old territory during a new project on soil insects in potatoes. This Horticulture Australia funded project is led by **Stewart Learmonth** (WA Agriculture, Manjimup), and also has components in southern Queensland, NSW and Victoria. The project will focus on soil insect monitoring and the predictiveness of pest activity, the need for and efficacy of soil treatments, and grower awareness of soil insect problems.

CRC-TREM

Simon Grove, who has just had his PhD thesis on saprolytic insects at Cape Tribulation accepted, has been offered a long-term position as Conservation Biologist with Forestry Tasmania, based in Hobart. This is primarily a research-based position. Hopefully Simon and family will not find the climate change between Cairns and Hobart too demanding.

Roz Blanche has started a project under **Nigel Stork** of the Rainforest CRC, investigating alternate hosts of agricultural crops on the Atherton Tableland. Roz will be based at the Atherton CSIRO laboratories.

NAQS Mareeba

Kylie Anderson, **Judy Grimshaw** and **Kerrie Huxham** have been variously involved in crazy ant surveillance and meetings relating to this finding. In May, Judy Grimshaw got into the swing (or was it the sway) of surveying by visiting coastal communities of the Western Province of Papua New Guinea. Travel was by boat and the seas were a little bit 'lumpy'. Unfortunately **David Tenakani** and **Marjorie Kame** (NAQIA PNG), who had been scheduled to be on-board as well, had to withdraw so were unable to exercise their sea-legs. **Barbara Waterhouse** has been kept busy carrying out some of the 'post Timor' surveillance of Department of Defence sites in north Queensland, as well as detecting yet another 'exotic' weed in the country. This time it's the aquatic weed *Limnocharis flava* and follow up removals and surveillance are still under way.

Increasing skill base in the NAQS camp has also been highlighted this last quarter. In May, **Kerrie Huxham** spent a week at ANIC with **Laurence Mound**, focusing on slide preparation and identification of thrips. Specimens collected from Mareeba and given to Kerrie as material to take to Canberra turned out to be the melon thrips, *Thrips palmi*. This detection has led to postponed area freedom for growers. **Judy Grimshaw** and **Kylie Anderson** spent a week in June mashing mealybugs with **John Donaldson**. All was in good taste, and much was learnt about scale insect preparation and identification. **Sarah Russell** from AQIS Brisbane also attended, which was an excellent chance for us to catch up on southern quarantine gossip.

Kylie ANDERSON

QUEENSLAND - SOUTH

The DPI recently released its latest ute guide for crop insects. This guide covers the northern grain belt. **Rod Elder** (DPI Rockhampton) worked on the compilation of this guide, with technical comments provided by many DPI entomologists. The guide is a useful photographic reference of pest and beneficials in the northern grain cropping regions. Congratulations to **Paul Grundy** (DPI Biloela) who was recently awarded his Ph.D. degree from the University of Queensland. Paul evaluated the assassin bug, *Pristhesancus plagipennis*, as an augmentative biological control agent of field crop pests. Paul received a GRDC Junior Research Fellowship program (JRF45) for this work, and was supervised by **Derek Maelzer** (UQ) and **Pat Collins** (DPI). Project highlights were the development of a mass-rearing system for assassin bugs, and field releases of assassin bugs suggesting that these predators could be promising

Kerrie Huxham learning of thrippy things from Laurence Mound at ANIC

biological control agents against lepidopteran and heteropteran pests, such as *Helicoverpa* and mirids, in pulses and cotton. Paul intends to continue investigating the use of assassinbugs for pest management in cotton and grain over the next few seasons. Well done Paul!

Peter Allsopp (BSES Bundaberg) and **Lastus Kuniata** (Ramu Sugar, Papua New Guinea) participated in a survey of pests and diseases of *Saccharum* spp. in PNG during May. The trip took them to Daru, Morehead, Tabubil, Vanimo, Wewak, Manus, New Ireland, New Britain, Ramu, Poppondetta, Alotau and Port Moresby, and collections were made on commercial sugarcane, garden canes, pit-pit and wild *robustum* and *spontaneum* canes. Of note was the widespread distribution of stem borers and planthoppers. The two planthopper genera, *Perkinsiella* and *Eumetopina*, account for the transmission of some very important sugarcane viral diseases (Fiji disease, Ramu stunt) and their broad distribution around PNG is of great significance. Unusual species of each genus were also seen and their identification will hold special interest. Some chewing canes were so heavily infested with *Eumetopina* that direct injury to the cane was seen with consequent reduction in cane growth. This insect has been observed in the Torres Strait and on the northern end of Cape York; further movement would be of importance to the Australian industry. *Rhabdoscelus obscurus* (cane weevil borer) was found in only limited distribution. Some *Chilo* larvae collected were unrecognised and may be new species. The survey team spent time with NAQIA staff at a number of locations.

Fruit fly researchers from Qld, NSW and WA are currently collaborating in a national project to improve fruit fly management by developing and testing new protein bait technology for preharvest control. The "national" project team comprises of **Annice Lloyd**, Queensland Horticulture Institute (QHI), Queensland Department of Primary Industries as Chief Investigator, along with **Dan Smith**, **Rosemary Kopittke** and **Ed Hamacek** also from QHI, **Andrew Jessup** and **John Macdonald** from NSW Agriculture, and **Francis de Lima** and **Sonya Broughton** from Agriculture WA. Funding for this research project is being provided by the relevant state departments of agriculture, Horticulture Australia Limited, AusHort, and by two commercial partners, Dow AgroSciences and Aventis.

Both commercial partners have developed new fruit fly bait formulations that the research team will evaluate for potential use in the management of

fruit flies in Australia. These new products contain different, safer, new generation insecticides that are not currently registered for fruit fly control in Australia. Both of these toxicants are many times safer than the organophosphate insecticides currently used in fruit fly baits and, hopefully, the new formulations will prove efficacious and undergo registration for use in fruit fly management in Australia.

The project also includes collaboration with international fruit fly bait experts, **Robert Mangan** and **Daniel Moreno** (USDA, Weslaco, Texas) who are recognized as world leaders in the formulation of superior protein fruit fly baits which incorporate "new generation", safer insecticides. Dr Mangan visited Australia early this year to share novel information on bait technology with project researchers and Australian horticultural producers.

Brad SCHOLZ
Regional Councillor

Army Malaria Institute

The last 3 months have been fairly busy for our small group. **Bob Cooper** returned from 3 months in East Timor in late May, and was replaced by **Steve Frances**. Before his departure, Steve Frances spent 2 weeks in April-May conducting a field evaluation of some new mosquito repellent formulations at Cowley Beach, near Innisfail, northern Queensland. Other members of this study were Lieutenant Colonel **Nguyen Van Dung**, from the Vietnamese Army, Major **Mustapha Debboun**, from the entomology department at Walter Reed Army Institute of Research, Washington DC, and **Nigel Beebe**, from the University of Technology, Sydney. This was a unique study involving people from 4 research organisations in 3 countries. While at Cowley Beach, they visited **Richard Piper** of Scientific Advisory Services, and also had a visit from **Bryce Peters** of UTS, Sydney.

Back in Brisbane, congratulations to **Cassie Jansen**, who has successfully completed her B.Sc. at the University of Queensland. She is now planning an honours project for next year. Former chief entomologist at AMI, **Tony Sweeney**, is now an adjunct Professor at the University of Technology, Sydney, and is continuing his work on the distribution of mosquitoes using GIS, in collaboration with **Bob Cooper** and **Nigel Beebe**.

Steve FRANCES

Queensland Institute of Medical Research

Congratulations to **Tessa Knox** for completing her Honours in Microbiology at the University of Queensland. She gained First Class Honours for her project entitled "Vector competence of *Aedes aegypti* from north Queensland for Dengue viruses" (Supervisors: **Peter Ryan** [QIMR], **Roy Hall** [UQ] and **Brian Kay** [QIMR]). Tessa found variation in the oral susceptibility to Dengue-2 virus among north Qld strains of *Ae. aegypti*. Tessa has secured a research position at QIMR and will complete vector competence experiments using Dengue 1, 3 and 4 viruses.

Sunita Quick is a visiting scholar at the Mosquito Control Laboratory for 3 months. Sunita has completed a BSc (Biology major) at Colorado College and has worked at the CDC in Fort Collins with **Nick Komar**. She wanted to obtain first hand experience of work in a medical research institute prior to starting her PhD studies in the USA. At QIMR she will determine whether arboviruses (Ross River and Barmah Forest viruses) cause any significant mortality in mosquito vectors.

Peter RYAN

Griffith University
Tropical fruit fly research group

Team members **Dick Drew**, **Meredith Romig** and **Raghu**, accompanied by **Brian Fletcher** (as a private consultant), **Richard Bull** (Aventis Crop Science) and **Dennis Lincoln** (Griffith Uni, PVC Research), all spent time in Bhutan during the autumn (Bhutanese spring). The visits were part of the ACIAR fruit fly project on the Chinese citrus fruit fly, *Bactrocera minax*. A number of experiments were set up to do with the fly's ecology and control. Dennis Lincoln took the opportunity to present Griffith University to several high-ranking members of the Royal Bhutanese Public Service. Raghu stopped over in India on the way back to Australia to view some type material held in the Indian Zoological Survey (Calcutta), and to take a well earned break from his Ph.D.

A Californian Department of Food & Agriculture funded project to develop a LucID key to 68 species of the *Bactrocera dorsalis* complex is off to a good start. **Amy Lawson** has been employed on the project and is busy coming to grips with the new version of LucID. As a UQ entomology graduate, with an Honours in scientific illustrating from Newcastle, Amy is well qualified for the task in hand. The key promises to make it much easier to identify most species in this notoriously difficult group. Our biggest problem at the moment is getting sales representatives of microscope companies to return our calls!

Tony CLARKE

Griffith University
Australian School of Environmental Studies
Fire ants (*Solenopsis invicta*) are all the rage at Griffith. **Kay Montgomery** has started her Honours with **Cas Vanderwoude** (Fire Ant Control project leader, DPI), **Clyde Wild**, and **Heather Proctor** (GU). She will be investigating the life history of *S. invicta*, in particular the time until colony maturation and production of queens. This research will involve both genotypes of fire ant known to occur in the Brisbane area. The existence of two types was suspected by Cas soon after the ants were detected, and this has been confirmed by mtDNA studies by **Jane Hughes'** molecular biology lab (GU). **Chris Gough** is another fire-ant student, starting his M. Phil. at Griffith under the supervision of Cas, Heather and **Carla Catterall**. Chris will be monitoring the effects of fire-ant control measures on non-target invertebrates.
Rod Eastwood has just submitted his thesis on the phylogeography of lycaenid butterflies to overwhelming acclaim by the reviewers. Fortified with his 1st-class Honours, Rod is now off for six months to Harvard, studying molecular techniques with **Naomi Pierce**, but will return to Griffith to start his Ph.D. on ant-lycaenid interactions.
Heather Proctor (GU) and **Dave Walter** (ZEN, University of Queensland) have turned in to ABRS the final version of their cd-rom of interactive LucID keys to soil mites. This has keys to soil-dwelling Mesostigmata, Prostigmata and Endeostigmata, as well as a keys to cohorts of all soil mites and to classes and orders of microarthropods in general. The keys were beautified by the artwork and HTML magic of **Catherine Harvey** (ZEN).

Heather PROCTOR

Front page to LucID system
by Heather Proctor and Dave Walter

University of Queensland
Department of Zoology & Entomology (ZEN)
The Walter 'Mites and Lesser Arthropods Laboratory' is bursting with activity, some of it even productive. In her spare time, **Sebahat Ozman** is busy describing new eriophyid mites from Australian conifers, including one species that seems to have remnants of legs III (and a bump that could be leg IV). **Gen Takaku** is surrounded by a myriad of perplexing *Coleolaelaps* mites from cane beetles, but is persistently mowing his way through setal homologies. **Irenne Vanninen** is satiated with thysanopteran gore after watching extraordinary numbers of Western Flower Thrips sucked down the gullets of ravenous predatory mites. **Jenny Beard** is fastidiously comparing spider mite aedeagi in the hope of determining which one sugarcane spidermite females find most appealing. **Fred Beaulieu** has just submitted the first draft of his PhD thesis proposal for the lab's admiration and is starting to eye climbing gear seriously for his adventure in canopy biodiversity. **Matthew Shaw** continues to stare in awe at his growing mountain of data on mites from tree-hollow nests and is polishing off a book chapter celebrating his mites and the late WD Hamilton's genius. **Owen Seeman** claims his thesis on mites of passalid beetles is in the mail and has no complaint about life in Hobart, even in mid-winter. **Golam Azam** sends his greetings from sunny WA and hopes to have the final version of his thesis on the distribution of introduced biocontrol agents returned soon. **Karen Bell** is nearly finished with *Temnoplectron* and will soon be considering triage on the next scarab genus. Congratulations to **Brenton Peters**, who has just had his PhD candidature confirmed (even if it is only on termites, not real mites).
Dave Walter is still exhausted after his most demanding semester ever, which was immediately followed by presentations to the CRC for Tropical Plant Protection 1st Stage Review and at the APEC meeting on quarantine issues, and is still smarting from certain anonymous grant referees who accused him of being 'just a taxonomist'. However, after the ego-boost of checking his ISI Citation Record, Dave is ready to wade into piles of half-finished ecological and taxonomic manuscripts once more, and has even find some time for ants, as well as their mites. Recent visitors to the lab included Professor **Don Loots**, famed South African acarologist and nematologist, **Len Coops** and his weather models from Oregon State University, and **Gordon Gordh** from the USDA-

APHIS. Last, but not least, the cd-rom 'Mites in Soil' with **Heather Proctor** (Griffith Uni) is off to ABRS!

Dave WALTER

Alan Fletcher Research Station

Michael Day travelled to North Queensland to look at insects on lantana. On the Atherton Tableland, the tingid *Leptobyrsa decora* was in large numbers at several sites and causing severe defoliation of many plants. This stem sucking bug appears to have established around Mt Fox, while other agents such as *Uroplata girardi*, *Salbia haemorrhoidalis* and *Teleonemia scrupulosa* have also been seen in large and damaging numbers at various sites in the north.

Michael DAY

SOUTH AUSTRALIA

Adelaide University

The organising committee for the 5th Invertebrate Biodiversity and Conservation Conference has been hard at work. The committee comprises **Andy Austin** (Convenor), **Steve Cooper** (SA Museum), **Muhammad Iqbal**, **John Jennings**, **Remko Leijs** (SA Museum), **Duncan Mackay** (Flinders University) and **Claire Stephens**. See: http://www.waite.adelaide.edu.au/bio2001.

As part of her PhD looking at the impact of bridal creeper, the environmental weed, *Asparagus asparagoides*, on insect biodiversity and associated ecosystem functions, **Claire Stephens** has been investigating the effect of bridal creeper invasion on the pollination of a threatened greenhood orchid, *Pterostylis bryophylia*. A fortuitous sticky trap collection in the field resulted in the identification of a probable pollinator: a tiny Phoridae (Diptera) with a *P. bryophylia* pollinium attached to the dorsal thorax. Data are still being collected and analysed on the effect of bridal creeper on the orchid's pollination rates and the abundance and distribution of the phorid.

Kerrie Davies was in the eastern Kimberley region in June collecting galls on Myrtaceae (particularly *Fergusonina/Fergusobia* galls).

For the second year, **Claire Stephens** and **Nick Stevens** organised "Six legged Science", a morning workshop of entomological activities for National Science Week on the Waite Campus, Adelaide University. Nick, Claire and six other enthusiastic postgrads and postdocs entertained forty Year 10 Urrbrae High students with alien-like parasitic wasps, giant hissing cockroaches, swaying spiny leaf insects, racing beetles and the cryptic tricks

Urbrae High School students observing spiny leaf insects

of predators and prey. A follow-up survey of the students revealed that live insect displays (when compared with pinned insects, posters and talks), were by far the winning aspects of the workshop. Encouragingly, over 60% indicated that they would be interested in doing more insect-related activitiesin the future

iAustralian Water Quality Centre

Staff at the Australian Water Quality Centre have been expanding their knowledge of the freshwater invertebrates of other parts of Australia. They successfully tendered for some identification work on samples from the upper Murrumbidgee River catchment and the Hunter region for the NSW Department of Land and Water Conservation. Several families not found in South Australia and many more genera have been added to the voucher collection. This work, along with some occasional samples from the Northern Territory, assists in the recognition of new taxa in South Australian streams. The number of genera of caenid mayfly found in SA has tripled to three, with *Wundacaenis dostini* being found in the Cooper Creek near Innamincka and *Irpacaenis deani* recognised in Sixth Creek in the Mount Lofty Ranges.

The AUSRIVAS models, which measure river health by sampling macroinvertebrates, should be running in their final form by the time this goes to print. This management tool will be utilised by catchment boards in SA and also by SA Water in its ongoing monitoring of wastewater discharges to streams.

The data collected over the last seven years also provides a good database for future reference. In many cases the only biological data available for some streams in SA is that collected during this program. The ranges of many taxa in South Australia have been expanded, with new records of many other species besides the mayflies mentioned above. Now **Paul McEvoy** and **Chris Madden** (with **Peter Goonan** of the EPA) have the task of writing the final report on the program for Environment Australia.

Paul McEvoy will also be busy (in between home duties with wife Tanya soon to deliver their first baby) with environmental flows work with consultants SKM for the Onkaparinga Catchment Water Management Board. Water for the environment is an emerging issue in SA with catchment boards now set up to cover most large catchments in the southern part of the state.

South Australian Museum

Archie McArthur has been contacted by **Robert Lavigne** and they are looking at the effects of fire on ants. Archie is also studying ants around Moomba and is looking at the impact of seismic lines on the environment. He has noticed in 20 year-old seismic lines that there appears to be an increase in species diversity and numbers of ants.

John JENNINGS
SA Regional Councillor

TASMANIA

University of Tasmania
School of Ag. Science/CRC for Sustainable Production Forestry

June saw two significant research meetings held in Tasmania. On June 4 at Gunns Forest Research Centre, Ridgley (previously North Forest Products), an industry/CRC workshop organised by **David de Little** and attended by **Geoff Allen** and **Mamoru Matsuki** was held on Autumn gum moth. At the workshop **Luke Rapley** reported his research on the potential mechanism's underlying intra-specific variation in the susceptibility of *E. globulus* to attack. June 25 – 28 saw a very successful national conference on sheep blowfly and lice held in Launceston, with over 100 delegates across a wide range of professions organized by **Brian Horton** of DPIWE. The uni was represented by **Geoff Allen**, also **Mick Lang** who presented his honours research on carrion utilisation by blowflies. Full papers of all presentations given are available on the FLICS website at http://www.tqw.com.au/tqw/flics/programpapers2.htm. **Mamoru Matsuki** also made a research visit to APP plantations in Gippsland, Victoria in early May. **Karina Potter** has finished her 3-month Queen's Trust research trip to the University of Leiden and is keen to apply her new molecular skills to some exciting research leads in her PhD project on ragwort flea beetle. Finally, July 20 saw the launch of **David Cowie's** new book, "Jewel Beetles of Tasmania" by the Tasmanian Field Naturalist's at the Tasmanian Museum & Art Gallery.

Forestry Tasmania

Humphrey Elliott travelled through parts of Asia in June for the mid-term review of an ACIAR project on the shoot borer, *Hypsipyla robusta*. During the review, **Rob Floyd** (Project Leader), **John Fryer** (Manager of ACIAR's Forestry Program) and Humphrey visited the Philippines, Thailand, Laos, Malaysia and the Australian centres involved in the project - CSIRO Entomology and QFRI. **Jane Elek** reports that the results of her insecticide trials will hopefully, in the not-too-distant future, produce some registration labels on several more environmentally-friendly insecticides for controlling forest insect pests. Jane and **Nita Ramsden** are busy collecting overwintering leaf beetles in order to monitor their emergence from overwintering and the onset of egg laying next spring. The pair have spent many cold, damp days searching through clumps of cutting grass. **Nita Ramsden** also represented FT at the Autumn gum moth workshop in Ridgley.

Dick Bashford reports that Forestry Tasmania is participating in the IBOY project GLIDE (Global Litter Invertebrate Decomposition Experiment). Thirty-one sites around the world are using identical protocols to set out standard litter bags and over a one year period examining the invertebrate fauna involved in litter decomposition. Dick has established litter bags in two forest types at the Warra LTER site in southern Tasmania. The invertebrate projects at Warra continue to provide some fascinating material. **Judi Griggs** works three days a week sorting pitfall and malaise material from the Warra site. Dick met with **Peter Lillywhite** at Museum Victoria to discuss the technical aspects of tall tree canopy fogging prior to another IBOY project commencing later in the year at Warra. **Chris Palmer** ANU is currently visiting Dick to conduct a five week search for the snow scorpion fly (Mecoptera) species in Tasmania as part of his PhD project. During the late summer over 10,000 specimens of one species were collected in pitfall traps at 1000-

1300 metres on top of Mt Weld. This compares with the 17 specimens collected at 120 metres over three years of another species. It's either feast or famine with these beasts. **David Yeates** (CSIRO) visited Hobart for three days with Chris to collect mecopterons on Mt Wellington and visit the Forestry Insect Collection.

Tasmanian Museum and Art Gallery

Bumblebees began hibernating in April this year, so **Roger Buttermore** and **Kaye Hergstrom** have been consolidating data, and preparing for the final year's data collection of their project. Canberra's loss is our gain! **Peter Taylor**, until very recently a highly valued volunteer with **Laurence Mound** at ANIC, has recently moved to Hobart, and has already volunteered to work on the collection.

Geoff R. ALLEN
Tasmanian Regional Councillor

VICTORIA

Entomological Society of Victoria

Each year the Society sponsors two bursaries at the Science Talent Quest organised by the Science Teachers' Association of Victoria. Last year's winners were **Lara Frieden** and **Adele Knights** who received a minor bursary for their video production on bees and **Megham Ketterer** who won a major bursary for her insect game.

Our February meeting was hosted by **Ken Walker** at the new Museum of Victoria venue. Ken arranged to keep the rainforest and gallery of life exhibits open after hours for us to view and then we descended on the cabinets which have been relocated from their long time temporary home at Abbotsford. The Museum now houses the substantial butterfly collection of Society member **David Holmes**. Much to our envy, Ken demonstrated his "digital corner" which contained microscopes and scanners that produce outstanding images. The only sour note to the evening was the news that Museum management would announce on the next day the abolition of a number of scientific staff positions.

April was the AGM at which the same office bearers were re-elected unopposed as usual. The presidential address was a comprehensive set of insect slides from his local area which generated much rivalry in identification skills. **Peter Williams** spoke to the June meeting about the Australian Plague Locust campaign 2000.

The February journal included the biennial list of member's interests and an author index to the previous year. It also contained a pamphlet entitled "How to Make an Insect Collection" prepared by the Society to answer that question when asked by the public. Later issues contained butterfly observations from Victoria, NSW and WA, some nomenclatural changes in the Odonata, and a comprehensive article on **William Heron**, a little recognised collector who supplied specimens to Lea (coleoptera) and Alexander (diptera).

The Society's Le Souëf Award recognises excellence in amateur entomology and details can be found on our webpage <http://www.vicnet.net.au/~vicento>. Nominations for are due to the Secretary, Ms Jan Tinetti, 138 Noone Street, Clifton hill Vic. 3068, by 30 September.

Ian ENDERSBY

Papua New Guinea

The mid-term research review of PNG Cocoa & Coconut Research Institute was held from 18-19 May at Tavilo near Rabaul. The meeting was told that the promising programme on the use of microbials against insect pests of cocoa was to be discontinued. There were no funds to hire a junior entomologist for the project.

Friends of PNG will be saddened to learn of the sudden demise of Dr. **Arnold Ningiga** who headed the Agricultural Plant Protection Division of the Department of Agriculture and Livestock in early 1990s. Arnold, himself once a senior research scientist, was a brilliant administrator who got things done. He never hesitated in recruiting international staff for his programmes. Almost one third of the mourners at his funeral oration were expatriates. Himself a veterinarian he provided a new direction to Quarantine services in PNG as the first line of defence against alien pests. After getting somewhat disillusioned in DAL he moved to Rural Development Bank where he was the Regional Manager for Mamose in implementing the Government's rural development program until his sudden passing away on July 8 at the age of 51. Arnold had charm, wit and ability to quickly grasp difficult problems. He was a true friend with whom to work and discuss. He will be sadly missed.

Ray KUMAR
PNG Correspondent

NOTICES

Information request

Kenji Nishida and William Miller are producing a list of gall-inducing Lepidoptera of the world. They are looking for any basic information, such as: gall-inducer (family, genus, species), host plant, plant part affected, geographical distribution, gall type, gall characters. In Australia gall-inducing is associated with the Gracillariidae, Oecophoridae (Stathmopodinae), Cosmopterigidae, Gelechiidae and Sesiidae, but any details will be welcome. If anyone is prepared to help, please contact Kenji at: knishida@cariari.ucr.ac.cr; Mail address: Apdo 1204-1002, Paseo los Estudiantes, San Jose, Costa Rica,
or William Miller: mille014@maroon.tc.umn.edu; Mail address: Dept Entomology, University of Minnesota, 1980 Folwell Ave, St. Paul, MN 55108, U.S.A.

ABSTRACTS available. Program and Abstracts of the Australian Entomological Society 30th AGM and Scientific Conference, 'Insects in the Australian Environment', ANU Canberra, 28 September – 2 October 1999.
Cpies remain available from: Nancy Endersby, (03) 9210 9222; Nancy.Endersby@nre.vic.gov.au

Technical Training Course ANIC, Canberra

Staff of the Australian National Insect Collection provide a training course for entomological technicians working with research collections of insects and related organisms for taxonomic study and identification. This course is designed to teach participants how to collect, prepare and curate entomological material to a stage ready for identification. The course comprises a series of demonstrations on these aspects as they relate to the major orders of insects and related arthropods. Specimen identification is not covered in the course. All demonstrations are conducted by ANIC staff expert in the area of concern. The next course will be held 23 - 27 September 2002, at the CSIRO Entomology Black Mountain Laboratories, Clunies Ross St, Acton, ACT 2601.
For more information contact Graham Crompton, ANIC Manager
Phone: (02) 6246 4036
Fax: (02) 6246 4264
Email: graham.crompton@ento.csiro.au
http://www.ento.csiro.au/products/products.html#training

Management of Diamondback Moth and other Crucifer Pests.

4th International Workshop 26-29 Nov. 2001
The fourth international DBM workshop, to be held at the Ubiversity of Melbourne, will continue the tradition of the first two workshops held in Taiwan and the third one held in Malayasia, of bringing together scientists and others involved with the *Brassica* industry from around the world. Themes of the workshop will focus on revision of progress made in *Brassica* Integrated Pest Management in the past two decades since the first workshop and will aim to identify the major impediments to its further progress. Emphasis will be placed on innovations in pest management techniques. Please note that the call for papers and registration details are now available on the new web site http://www.conferences.unimelb.edu.au/moth/
Email: fionacam@unimelb.edu.au.

5th International Congress of Dipterology

September 30 – October 5, 2002
University of Queensland, Brisbane
The International Congress of Dipterology will bring together 300 researchers from a broad range of disciplines to discuss the latest research on Diptera (true flies). The Program will be designed to provide a unique environment in which to discuss current research. Themes will include: Morphology, Physiology and Ultrastructure; Biodiversity and Conservation; Agricultural Diptera; Behaviour and Ecology; Medical, Veterinary and Forensic Diptera; Systematics and Phylogeny; Genetics and Genomics; Collections and Databases
Please see our web site at http://www.uq.edu.au/entomology/dipterol/diptconf.html
ICD5 Congress Secretariat, Conference Connections, PO Box 108, Kenmore, Queensland, Australia 4069; Fax (61 7) 3201 2809; email sally.brown@uq.net.au

Fruit Flies
6th International Symposium on Fruit Flies of Economic Importance, 6 - 10 May 2002. Stellenbosch, South Africa. Further information: Eugene Booysen, Cape AgriTours e-mail: agritour@adept.co.za

A.E.S. PHIL CARNE PRIZE

The Executive takes pleasure in announcing The Australian Entomological Society's Phil Carne Prize. This prize honours contributions made by Dr Phil Carne to the science of entomology and to The Australian Entomological Society, and is intended to foster high-quality entomological research among young scientists

The prize is open to any undergraduate or postgraduate who has submitted a paper to the **Australian Journal of Entomology** and had it accepted for publication within the last year. Entrants may be enrolled full or part-time, and are not required to be members of The Australian Entomological Society. Entries will be reviewed by the normal Journal referring process. The Chief Editor will advise the Executive of the eligible papers and these will be presented to a selection committee appointed and convened by the Vice-President of the Society.

The winner will be invited to present the winning paper at the Society's Annual General Meeting and Scientific Conference. The prize will be $300 plus free conference registration, accommodation, return airfare to the Annual Conference and presentation of a scroll.

Manuscripts and other editorial correspondence should be addressed to Dr Peter Allsopp, Chief Editor, Bureau of Sugar Experiment Stations, Private Bag 4, Bundaberg DC 4670, Australia.

THE AUSTRALIAN ENTOMOLOGICAL SOCIETY INC.
NOMINATION FOR MEMBERSHIP

Please return to: Ms Nancy Endersby, AES Secretary, c/o Institute for Horticultural Development, Private Bag 15, Scoresby Business Centre VIC 3176 AUSTRALIA

We, the undersigned

Proposer ..... (print name) (signature)

Seconder ..... (print name) (signature)

being financial members of the Society, propose the following for membership of the Australian Entomological Society Inc.

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of (Address) .....

.....Post Code.....

Tel. .....Fax .....

E-mail ..... Degrees, etc. .....

Interests, experience and publications in entomology for publication in the News Bulletin *Myrmecia* (please attach brief resumé) .....

I accept nomination and undertake, if elected, to abide by the rules of the Society and to pay annual subscriptions by the date prescribed.

Signature ..... **Date** .....

For **2001**: Annual subscription $68.25; full-time student or retired members $34.15
New members receive a first year rebate of $5.00 (pay $63.25) and students $2.50 (pay $31.65).

Students please attach proof of full-time student status

Payment in Australian dollars is required with nomination and may be made by MONEY ORDER, CHEQUE (made payable to Australian Entomological Society Inc.) or CREDIT CARD

Bankcard Visa Mastercard
Number _ _ _ _ _ _ _ _ _ _ _ _ Expiry date _ _/_ _

Signature _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ I require a receipt YES/ NO

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Printed by:
GOANNA PRINT
151-155 Gladstone St.
Fyshwick ACT 2609
Fax (02) 6280 7369

Distributed by:
Blackwell Science Asia
54 University St
CARLTON VIC 3053
Ph (03) 9347 0300